In the Claims

1. (Canceled)

2. (Currently amended) The method of claim 21 additionally comprising a step of depositing a layer of a biologically acceptable top sealant over said neo-cartilage construct implanted into said lesion.

3. (Original) The method of claim 2 further comprising a step of depositing a layer of a biologically acceptable bottom sealant over a bottom of said lesion.

4. (Original) The method of claim 3 wherein said top and said bottom sealants are the same or different.

5. (Currently amended) The method of claim 4 wherein a combination of said construct deposited into said lesion and said top sealant deposited over said construct results in formation and growth of a superficial cartilage layer sealing the cartilage lesion *in situ*.

6. (Canceled)

7. (Currently amended) The method of claim [[~~6~~]] 21 wherein the support matrix ~~of the neo-cartilage construct~~ is prepared from a material selected from the group consisting of a Type I collagen, a Type II collagen, a Type IV collagen, a cell-contracted collagen containing proteoglycan, ~~a cell-contracted collagen containing~~ glycosaminoglycan~~, a cell-contracted collagen containing~~ or glycoprotein, gelatin, agarose, hyaluronin, fibronectin, laminin, a bioactive peptide growth factor, a cytokine, elastin, fibrin, a synthetic polymeric fiber made of a polylactic acid, a synthetic polymeric fiber made of a polyglycolic acid, polycaprolactone, a polyamino acid, a polypeptide gel, a collagenous gel, a polymeric thermo-reversible gelling hydrogel (TRGH), a copolymer thereof and

a combination thereof.

8. (Currently amended) The method of claim [[~~7~~]] 21 wherein ~~the hydrostatic pressure is from about zero MPa to about 10 MPa above atmospheric pressure at about 0.01 to about 1 Hz, wherein the time for applying the hydrostatic pressure is from zero to about 24 hours per day for from about one day to about ninety days, wherein said hydrostatic pressure is preceded or followed by a period of zero to about 24 hours per day of a static atmospheric pressure for from about one day to about ninety days, wherein~~ said support matrix seeded with chondrocytes is perfused with a medium at a ~~the~~ flow rate ~~is~~ from about 1 μL/min to about 500 μL/min~~, wherein the cell density is from about 3 to 60 millions per mL and wherein the oxygen concentration is from about 1% to about 20%~~.

9. (Currently amended) The method of claim 8 wherein the neo-cartilage construct ~~comprises a suspension of chondrocytes in TRGH at a density of from about 12 to about 15 millions per mL, wherein~~ is treated with the hydrostatic cyclic pressure ~~is~~ from about 0.05 MPa to about 3 MPa at the frequency of from about 0.1 to about 0.5 Hz or with the constant pressure ~~is~~ from about zero to about 3 MPa above atmospheric pressure; ~~and~~

wherein such pressure is applied for about 7 to about 28 days;

wherein said hydrostatic pressure is preceded or followed by a resting period ~~of~~ for from about zero to about 28 days ~~of~~ at atmospheric pressure; ~~and~~

wherein said perfusion flow rate is about 5 μL to about 50 μL; and

wherein said perfusion is performed in the presence of about 2%to about 5% oxygen.

10-20 (Canceled)

21. (New) A method for repair and restoration of damaged,

injured, diseased or aged articular cartilage to a functional hyaline cartilage, said method comprising steps:

a) preparing a neo-cartilage construct comprising isolated chondrocytes seeded into a three-dimensional support matrix containing a plurality of pores,

wherein said construct is subjected to a static, constant or cyclic hydrostatic pressure, atmospheric pressure or non-pressure conditions, wherein said hydrostatic pressure of about zero MPa to about 10 MPa above atmospheric pressure is applied at a frequency of from about 0.01 to about 1 Hz, for from zero to about 24 hours per day for from about one day to about ninety days and wherein said applying of the hydrostatic pressure is preceded or followed by a resting period of from zero to about 24 hours per day at a static atmospheric pressure for from about one day to about ninety days; and

b) implanting said construct into said injured or damaged articular cartilage or into a lesion in said articular cartilage.

22. (New) The method of claim 21 wherein said support matrix is a gel, collagenous gel, sol-gel, thermoreversible gelation hydrogel (TRGH) or a collagenous gel or hydrogel fabricated into a sponge, porous scaffold, honeycomb or honeycomb lattice.

23. (New) The method of claim 21 wherein said chondrocytes are autologous or heterologous.

24. (New) The method of claim 4 wherein said top or bottom sealant is selected from the group consisting of gelatin, a copolymer of polyethylene glycol and poly-lactide or poly-glycolide, periodate-oxidized gelatin, 4-armed pentaerythritol thiol and a polyethylene glycol diacrylate, 4-armed tetra-succinimidyl ester or tetra-thiol derivatized PEG, photo-polymerizable polyethylene glycol-co-poly(α-hydroxy acid) diacrylate macromer, 4-armed polyethylene glycols derivatized with

succinimidyl ester and thiol plus methylated collagen, hydrogel, derivatized polyethylene glycol (PEG), derivatized polyethylene glycol (PEG) cross-linked with alkylated collagen, tetra-hydrosuccinimidyl or tetra-thiol derivatized PEG, cross-linked PEG with methylated collagen and a combination thereof wherein the first and second sealant are the same or different.

25. (New) The method of claim 24 wherein the sealant is cross-linked PEG with methylated collagen.

26. (New) The method of claim 25 wherein the chondrocytes are isolated and expanded by incubation in a culture medium and suspended in a solution, gel, sol-gel or thermo-reversible gelation hydrogel and incorporated into the support matrix.

27. (New) The method of claim 26 wherein said support matrix is the collagenous sponge comprising chondrocytes suspended in the gel or sol-gel.

28. (New) The method of claim 27 wherein said support matrix is treated with said cyclic hydrostatic pressure at about 3.0 MPa at frequency of about 0.1 Hz applied for about 4 hours per day followed by a resting period of about 20 hours per day for about 7 days.

29. (New) The method of claim 26 wherein said support matrix is TRGH and wherein said chondrocytes are suspended in said TRGH at a temperature below about 30°C when the TRGH is in a liquid sol form, and wherein said TRGH is subsequently converted into a solid gel form by treating it with a temperature between above 30°C and about 37°C.

30. (New) The method of claim 29 wherein said support matrix

is treated with said cyclic hydrostatic pressure at about 3.0 MPa at frequency of about 0.1 Hz applied for about 4 hours per day followed by a resting period of about 20 hours per day for about 7 days.

Election/Restrictions

Claims in the application are 1-20.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-9, drawn to a method for repair and restoration of damaged, diseased or aged cartilage, classified in class 424, subclass 93.7.

II. Claims 10-20, drawn to a method for treatment and regeneration of injured, damaged, diseased or aged articular cartilage, classified in class 424, subclass 423.

The inventions are independent or distinct, each from the other because:

The methods of the claims of inventions I and II require different steps and/or conditions such that each method can be performing without the other. The method of invention I requires steps a) - b), whereas the method of invention II requires steps a) - h). The method of invention I is drawn to repair and restoration of cartilage, whereas the method of invention II is drawn to treatment and regeneration of articular cartilage.

Examining inventions I and II together will be a serious burden due to different searches and considerations for applying prior art required due to differences in the scope and content of the claims of inventions I and II.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. The reserve a right to petition, the election

must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the Examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 USC 103(a) of the other invention.

Applicants elect, with traverse, to prosecute Group I, encompassing claims 1-9. Applicants traverse Examiners restriction requirement on the grounds that although Examiner found different classification for Group I and II, the claim 10, steps (a)-(g), of the Group II encompasses steps (a) and (b) of claim 1 of the Group I. Applicants respectfully submit that if Examiner searches Group II based on claim 10, he will by necessity find the prior art, if there is any, that would be relevant to the steps (a) and (b) of claim 1. As to the election of species, Examiner did not indicate which species should be elected. Consequently, Applicants elect to prosecute group I, claims 1-9, with regard to the treatment of injured articular cartilage. Applicants, however, wish to point out to the Examiner, that, for example, the aged cartilage may also be damaged, injured or diseased and respectfully request that Examiner examines claims vis-a-vis to the injured, damaged, diseased or aged articular cartilage, as originally claimed.

Applicants respond to the Restriction Requirement by electing to prosecute group I, original claims 1-9. In order to present the elected claims in better form for examination, Applicants cancel claims 1, 6 and non-elected claims 10-20. Applicants amended claims 2, 5 and 7-9 and added new claims 21-30. Claims 3 and 4 are original.

Applicants respectfully request Examiner to examine newly presented claims.

Respectfully submitted,

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